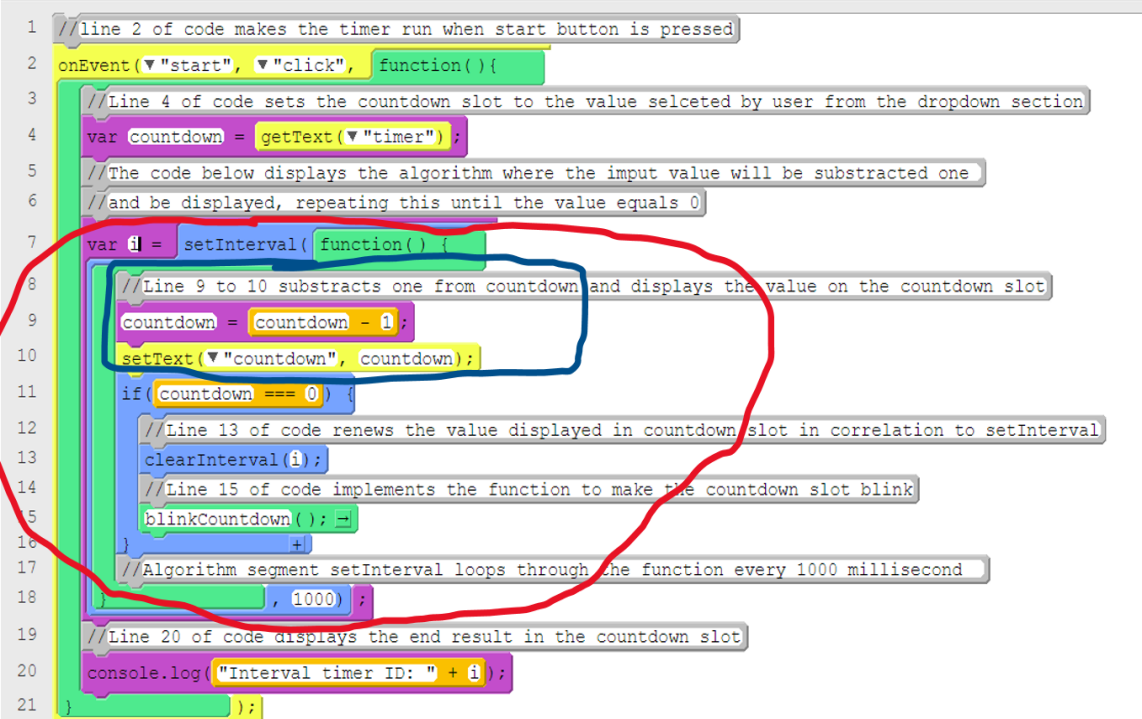
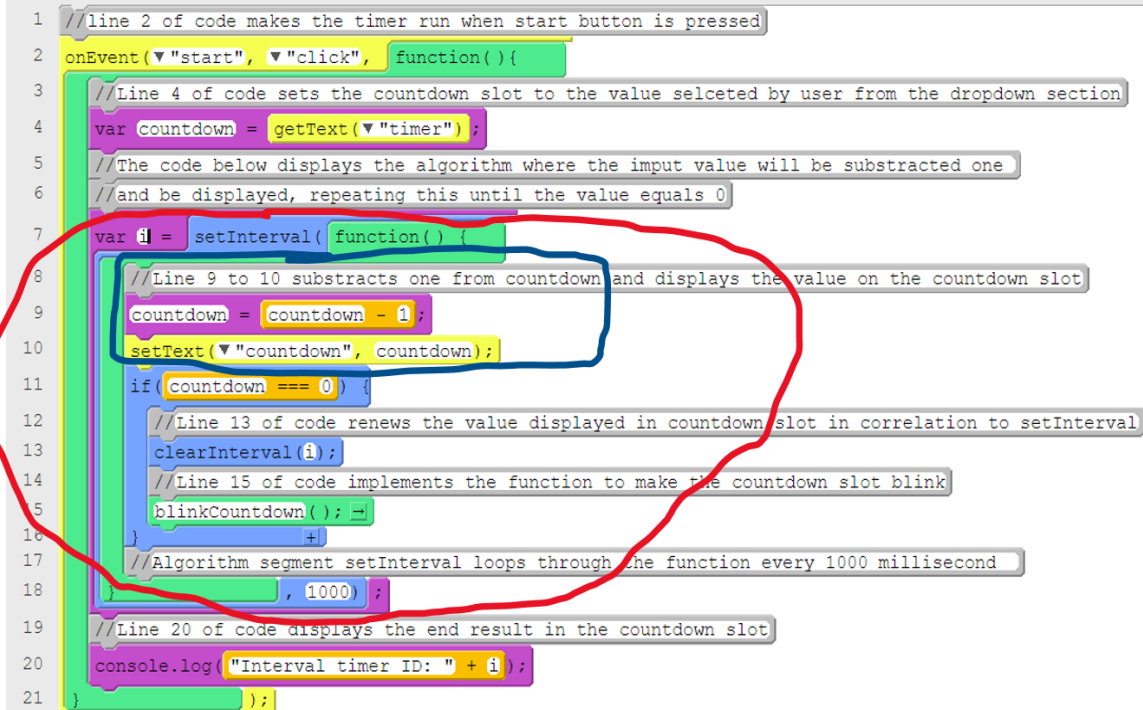


2A	Hello, today I will be showcasing to you my app and it's purpose is to assimilate a timer. I used App Lab section by Code.org to build my app. The timer was built in a pseudo language that only operates in the App Lab environment. It starts by displaying a blank countdown slot in which an algorithm will take the input value by the user and subtract one from it and display the results. It will repeat such proses until the value displayed is zero. After the fact, a different algorithm will make the timer count internally three seconds and the countdown slot will begin to blink. It will disappear one second and come back for one second, it will repeat this process until the app is restarted completely.
2B	Whilst developing the code for the program, two main problems came about. One main problem was to learn how to get the app to display in the countdown slot in the screen the values chosen by the user preliminary set by me on the dropdown text. This was an independent development. At first, my idea was to implement many numbers from where to choose from, but that would had resulted in an exponentially longer code to map to the screen and only giving the option of one-digit values. Therefore, I decided to implement a dropdown textbox with predetermined values as to now only map the value of it to the screen, resulting in a successful simplification of my code. Second problem was the most essential to fix, how to subtract one progressively. This was also resolved independently. For this I implemented a function that would repeat itself every second, which would take countdown and subtract one from its value until it reached zero. But to keep it from going into negative numbers, I implemented a function which would reset the value of countdown and set it to zero. Which took less functions and is more cleaner than implementing a for-loop.
2C	 <pre> 1 //line 2 of code makes the timer run when start button is pressed 2 onEvent(▼"start", ▼"click", function(){ 3 //Line 4 of code sets the countdown slot to the value selceted by user from the dropdown section 4 var countdown = getText(▼"timer"); 5 //The code below displays the algorithm where the input value will be substracted one 6 //and be displayed, repeating this until the value equals 0 7 var i = setInterval(function() { 8 //Line 9 to 10 substracts one from countdown and displays the value on the countdown slot 9 countdown = countdown - 1; 10 setText(▼"countdown", countdown); 11 }, function() { 12 //Line 13 of code renews the value displayed in countdown slot in correlation to setInterval 13 clearInterval(i); 14 //Line 15 of code implements the function to make the countdown slot blink 15 blinkCountdown(); 16 }, 1000); 17 //Algorithm segment setInterval loops through the function every 1000 millisecond 18 //Line 20 of code displays the end result in the countdown slot 19 console.log("Interval timer ID: " + i); 20 } 21); </pre> The red oval in the image captures the algorithm which is essential for the function of the program. Within it there is an algorithm in lines 9-10, which takes the value given to countdown by the user from the dropdown textbox and subtracts one from it and then displays

the result on the countdown slot. This algorithm was developed independently. The second algorithm begins in code line 7 as `setInterval`, and its value is displayed in line 18 of the code as 1000 milliseconds. The value of the `setInterval` was also developed independently. Both algorithms are essential because in unison they allow the program to work, as without the first algorithm the code would not work as nothing would be displayed nor nothing would be subtracted so the function would eventually reach zero. While without the second algorithm result would always be one less then the value set for countdown and there be no command telling it to repeat the process in algorithm number one.

2D



```

1 //line 2 of code makes the timer run when start button is pressed
2 onEvent(▼"start", ▼"click", function(){
3   //Line 4 of code sets the countdown slot to the value selceted by user from the dropdown section
4   var countdown = getText(▼"timer");
5   //The code below displays the algorithm where the imput value will be substracted one
6   //and be displayed, repeating this until the value equals 0
7   var i1 = setInterval( function() {
8     //Line 9 to 10 substracts one from countdown and displays the value on the countdown slot
9     countdown = countdown - 1;
10    setText(▼"countdown", countdown);
11    if (countdown === 0) {
12      //Line 13 of code renews the value displayed in countdown slot in correlation to setInterval
13      clearInterval(i1);
14      //Line 15 of code implements the function to make the countdown slot blink
15      blinkCountdown();
16    }
17    //Algorithm segment setInterval loops through the function every 1000 millisecond
18    , 1000);
19    //Line 20 of code displays the end result in the countdown slot
20    console.log("Interval timer ID: " + i1);
21  });

```

The blue rectangle in the image showcases a code segment which implements a mathematical function to the program which was developed independently. The code takes the value given to countdown by the user in the dropdown textbox or code `getText` from line 4 and subtracts one from it. After so, the code segment displays the result in the countdown slot on the screen. This code segment is part of a function which serves as an algorithm to repeat the code segment. Without the code segment the hole program would not run as there would be no segment giving it the means to subtract and reach zero, therefore the displayed value would always be the one input by the user.